

### REMARKS

In an Office Action mailed on December 20, 2002, claims 1, 2, 4, 6-8, 27, 28, 30-32, 41, 42 and 44-46 were rejected under 35 U.S.C. § 102(e) as being anticipated by Yoo; claims 1-3, 5-8, 27, 29-32, 41-43, 45 and 46 were rejected under 35 U.S.C. § 102(b) as being anticipated by Schuster; claims 9-22, 33-36 and 44-49 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Schuster; and claims 23-26, 37-40 and 51-54 were allowed. The rejections are discussed in the following sections below.

#### Rejections of Claims 1, 2 and 5-8:

As amended, the apparatus of independent claim 1 includes a magnetometer, a circuit and a magnet. The magnetometer indicates a string of a magnetic field that at least partially extends through a portion of a downhole pipe. The circuit is coupled to the magnetometer to indicate a feature that is present in the pipe based on the indication from the magnetometer. The magnet establishes the magnetic field.

Contrary to the limitations of claim 1, Yoo does not disclose an apparatus that includes a magnet to establish a magnetic field and a magnetometer to indicate a strength of the magnetic field that is established by the magnet. Instead, Yoo teaches a detector assembly 66 that includes a giant magnetoresistive (GMR) sensor 70 that senses sensitivity to changes in a nearby or surrounding magnetic field. This magnetic field is the earth's natural magnetic field, as described in lines 15-55 of column 4 of Yoo. However, Yoo neither teaches nor suggests that the GMR sensor 70 or the detector assembly 66 includes a magnetic to establish the magnetic field that is sensed by the sensor 70. Thus, Yoo fails to teach all of the limitations of claim 1.

Schuster also fails to teach all limitations of claim 1. In this manner, Schuster teaches a magnetic detecting apparatus 10 that senses changes in a magnetic flux for purposes of detecting downhole magnetic anomalies. More specifically, Schuster teaches coil windings for purposes of detecting this change in magnetic flux. *See for example*, Schuster, 3:49-75 and 4:1-8. Such coil windings, however, neither indicate the strength of a magnetic field nor constitute a

magnetometer that indicates a strength of a magnetic field. Thus, for at least this reason, Schuster fails to teach all limitations of claim 1.

Claims 2 and 5-8 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 9-12:

The apparatus of independent claim 9 includes a magnet and a winding. The magnet establishes a flux field near the apparatus. The magnet is formed from a material that has magnetic properties similar to SmCo-30, and the flux field at least partially extends through a portion of a downhole pipe. The winding generates a signal that is produced by a change in a strength of the flux field to indicate detection of a feature of the pipe.

The Examiner rejects claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. The Examiner states that the features contained in claim 9 "are considered obvious design considerations well within the capabilities of one skilled in the art."

However, the Examiner fails to establish a *prima facie* case of obviousness for independent claim 9. In this manner, the Examiner merely concludes a case of obviousness for claim 9 without showing any support for a suggestion or motivation to modify Schuster to include the missing claim limitations. For example, the Examiner provides no support for the alleged suggestion or motivation to support modifying Schuster so that its magnet has magnetic properties similar to SmCo-30. A suggestion or motivation in the art is required for a *prima facie* case of obviousness, and the Examiner must provide support for the alleged suggestion or motivation by citing specific language from a prior art reference. *Ex parte Gambogi*, 62 USPQ2d 1209, 1212 (Bd. Pat. App. & Int. 2001); *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); M.P.E.P. § 2143.

To the extent that the Examiner is taking Official Notice to derive the suggestion or motivation to modify Schuster so that its magnet has magnetic properties similar to SmCo-30, the Applicant challenges this Official Notice and requests the Examiner to produce a reference to support the Examiner's contention that the alleged suggestion or motivation to modify Schuster

in the prescribed manner is within the general level of skill in the art. M.P.E.P. § 2144.03 It is noted that "rarely, however, will the skill in the art component operate to supply missing knowledge or prior art to reach an obviousness judgment." *Al-Site Corp. v. VSI Int'l, Inc.*, 50 USPQ2d 1161, 1171 (Fed. Cir. 1999).

Thus, for at least the reasons stated above, withdrawal of the § 103(a) rejection of claim 9 is requested. Claims 10-12 are patentable for at least the reason that these claims depend from an allowable claim.

#### Rejections of Claims 13-16:

The apparatus of independent claim 13 includes a magnet and a winding. The magnet establishes a flux field that at least partially extends through a portion of a downhole pipe. The winding generates a signal that is produced by a change in a strength of the flux field to indicate a feature of the pipe. Claim 13 recites that the winding has at least approximately 1000 turns

The Examiner rejects claims 13-16 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. However, Schuster neither teaches nor suggests having a winding to generate a signal produced by change in the strength of a flux field where the winding has at least approximately 1,000 turns. As pointed out above in the discussion of claim 9, to establish a *prima facie* case of obviousness of claim 13, the Examiner must point out with a specific citation to a prior art reference language that provides the alleged suggestion or motivation to modify Schuster to derive the claim limitations that are not present in Schuster. In other words, the Examiner must show specific support for the alleged suggestion or motivation to modify Schuster so that the appropriate winding of Schuster's anomaly detection apparatus has at least approximately 1,000 turns. Otherwise, the Examiner fails to establish a *prima facie* case of obviousness for claim 13.

To the extent the Examiner is taking Official Notice for the alleged suggestion or motivation, the Applicant challenges the Official Notice and requests a reference to support that such a suggestion or motivation is within the general level of skill in the art. M.P.E.P. § 2144.03. Otherwise, withdrawal of the § 103(a) rejection of independent claim 13 is requested.

Claims 14-16 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 17-19:

Independent claim 17 recites an apparatus that includes a winding and a magnet, and claim 17 recites that the apparatus has a longitudinal dimension that does not exceed approximately two inches.

The Examiner rejects independent claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. Although Schuster does not teach or suggest such a longitudinal dimension, the Examiner contends that the missing claim limitations, such as the longitudinal dimension, within the general level of skill in the art. However, the Examiner must provide support for the alleged suggestion or motivation to modify Schuster so that its detection apparatus has a longitudinal dimension that does not exceed approximately two inches. To the extent that the Examiner is taking Official Notice for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations, Applicant hereby challenges the Official Notice and requests a reference to support the alleged suggestion or motivation. M.P.E.P. § 2144.03. Otherwise, withdrawal of the § 103(a) rejection of independent claim 17 is requested.

Claims 18 and 19 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 20-22:

The apparatus of independent claim 20 includes a magnet and winding that has at least approximately 40,000 turns.

The Examiner rejects independent claim 20 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. However, Schuster fails to disclose a winding that has at least approximately 40,000 turns to generate a signal that is produced by a change in a strength of a flux field. The Examiner fails to provide specific support for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitation and thus, fails to establish a

*prima facie* case of obviousness for claim 20. To the extent the Examiner is taking Official Notice for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations, Applicant hereby challenges the Official Notice and requests a reference that shows such a suggestion or motivation is within the general level of skill in the art. M.P.E.P. § 2144.03. Otherwise, withdrawal of the § 103(a) rejection of independent claim 20 is requested.

Claims 21 and 22 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 27, 28 and 31 and 32:

As amended, the method of independent claim 27 includes sensing a strength of a magnetic field that at least partially extends through a portion of a downhole pipe. The method includes using a magnet to establish the magnetic field and based on the sensed strength, generating a signal that indicative of a feature of the pipe.

Contrary to the limitations of amended claim 27, Yoo neither teaches nor suggests using a magnet to establish a magnetic field that is sensed to generate a signal indicative of a feature of a pipe. To the contrary, Yoo teaches using the earth's natural magnetic field and sensing the resultant induced magnetic fields to located casing joints, not using a magnet as recited in claim 27. *See generally*, Yoo, 4:16-34. Furthermore, Schuster neither teaches nor suggests sensing a strength of a magnetic field, as Schuster teaches sensing a change in magnetic flux to indicate a magnetic anomaly, not sensing the strength of a magnetic field. Therefore, for at least these reasons, neither Yoo nor Schuster teaches all of the limitations of amended independent claim 27; and thus, claim 27 overcomes the § 102 rejections.

Claims 28, 31 and 32 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, withdrawal of the § 102 rejections of claims 27, 28, 31 and 32 is requested.

Rejections of Claims 33 and 34:

The method of independent claim 33 recites using a magnet having magnetic properties similar to SmCo-30.

The Examiner rejects independent claim 33 under 35 U.S.C. § 103(a) in view of Schuster. However, Schuster fails to teach or suggest the use of a magnet that has magnetic properties similar to SmCo-30. The Examiner contends that the missing claim limitations would be within the general level of skill in the art. However, to establish a *prima facie* case of obviousness, the Examiner must show specific support for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations. To the extent that the Examiner is taking Official Notice for this alleged suggestion or motivation, Applicant hereby challenges the Official Notice and requests a reference to support that such a suggestion or motivation is within the general level of skill in the art. M.P.E.P. § 2144.03 Otherwise, withdrawal of the § 103(a) rejection of claim 33 is requested. Claim 34 is patentable for at least the reason that this claim depends from an allowable claim.

Rejections of Claims 35 and 36:

The method of independent claim 35 includes using a winding that has at least approximately 40,000 turns to generate a signal that is produced by a change in a strength of a flux field.

The Examiner rejects claim 35 under 35 U.S.C. § 103(a). However, Schuster neither teaches nor suggests using a winding to generate a signal that is produced by a change in a strength of a flux field where the winding has at least approximately 40,000 turns. Furthermore, the Examiner fails to provide support for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations. To the extent that the Examiner is taking Official Notice of this alleged suggestion or motivation, Applicant hereby challenges the Official Notice and requests a reference to support the Examiner's contention that such a suggestion or motivation exists in the general level of skill in the art. Otherwise, withdrawal of the § 103(a) rejection of claim 35 is requested.

Claim 36 is patentable for at least the reason that this claim depends from an allowable claim.

Rejections of Claims 41-46:

The method of claim 41 includes sensing a strength of a magnetic field that at least partially extends through a portion of a downhole pipe and based on the sensed strength, generating a signal that is indicative of sudden transverse movement.

Neither Yoo nor Schuster teaches or suggests based on a sensed strength of a magnetic field, generating a signal that is indicative of a sudden transverse movement. Applicant requests for the Examiner to point out where Yoo or Schuster allegedly teaches the generation of such a signal. Otherwise, withdrawal of the § 102 rejections of claim 41 in view of either Yoo or Schuster is requested. Claims 42-46 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 47 and 48:

The method of claim 47 includes using a magnet that is formed from a material having magnetic properties similar to SmCo-30 to establish a flux field that at least partially extends through a portion of a downhole pipe.

The Examiner rejects claim 47 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. However, Schuster fails to disclose either a magnetic material having magnetic properties similar to SmCo-30 or sensing a change in a strength of a flux field to indicate sudden transverse movement. Furthermore, the Examiner fails to provide support for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations. To the extent that the Examiner is relying on Official Notice for the alleged suggestion or motivation to modify Schuster to derive the missing claim limitation, Applicant hereby challenges the Official Notice and requests a reference to support the Examiner's contention that such a suggestion or motivation is within the general level of skill in the art. Otherwise, withdrawal of the § 103(a) rejection of claim 47 is requested.

Claim 48 is patentable for at least the reason that this claim depends from an allowable claim.

Rejections of Claims 49 and 50:

Independent claim 29 recites using a winding that has at least approximately 40,000 turns to generate a signal that is produced by a change in a strength of a flux field

The Examiner rejects claim 49 under 35 U.S.C. § 103(a) as being unpatentable over Schuster. However, Schuster fails to teach using a winding that has at least approximately 40,000 turns to generate a signal that is produced by a change in a strength of a flux field. The Examiner contends that the missing claim limitations are within the general level of skill in the art. However, to establish a *prima facie* case of obviousness, the Examiner must show specific support the alleged suggestion or motivation to modify Schuster to derive the missing claim limitations. To the extent that the Examiner is taking Official Notice that the suggestion or motivation to modify Schuster to derive the missing claim limitations is within the general level of skill in the art, Applicant hereby challenges the official notice and requests a document to support the Examiner's contention that such a suggestion or motivation is within the general level of skill in the art. Otherwise, withdrawal of the § 103(a) rejection of claim 49 is requested.

Claim 50 is patentable for at least the reason that this claim depends from an allowable claim.

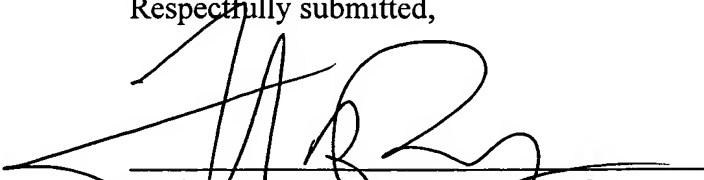


CONCLUSION

In view of the foregoing, withdrawal of the §§ 102 and 103 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (22.1414).

Respectfully submitted,

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